Service Manual

NATIONAL
STEREO
PANASONIC

MODEL SS-8030L

SPECIFICATIONS

FM TUNER SECTION

Frequency Range :	87.5 MHz～108 MHz
Sensitivity :	4μV IHF
Image Ratio :	68 dB (at 98 MHz)
Stereo Separation :	35 dB (30% 60 dB 1 kHz)
S/N Ratio :	65 dB (100% 60 dB)
Distortion :	1% (30% 60 dB 1 kHz)
Filters :	SCA Filter & 38 kHz Filter
Antenna :	300Ω Balanced

AM SECTION

Frequency Range :	LW	145 kHz～285 kHz
	MW	515 kHz～1610 kHz
	SW	5.9 MHz～18 MHz
Sensitivity :	LW	300 μV/m
	MW	300 μV/m
	SW	300 μV/m
Image Ratio :	LW	45 dB (200 kHz)
	MW	68 dB (1 MHz)
	SW	35 dB (12 MHz)

AUDIO SECTION

Circuit :	ITL, OTL, SEPP
PMPO (Total) :	32 W
MPO (Total) :	16 W IHF, THD5%, at 8Ω
Frequency Response :	30 Hz～30 kHz
Power Band Width :	23 Hz～24 kHz
Damping Factor :	6.2 at 8Ω, 1 kHz
Residual Hum :	less than 0.5 mV
Input Sens. & S/N :	Phono 150 mV 55 dB Tape 200 mV 50 kΩ 60 dB
Tape Output :	40 mV 100 kΩ
Tone Control Bass :	+10 dB −10 dB (100 Hz)
Treble :	+10 dB −10 dB (10 kHz)

SPEAKER SECTION

System :	2-way 2-speaker Air Suspension
Impedance :	8Ω
Woofer :	16cm (6 ½″) EAS16P24SS
Tweeter :	6.5cm (2 ½″) EAS65PH34SD
Cross Over Frequency :	10 kHz

PLAYER SECTION

MODEL SAP-413

Type :	Fully Automatic Record Changer
Drive :	Rim Drive
Motor :	2-Pole Induction
Turntable :	28cm 11 inch
T.T. Speed :	33 ⅓, 45, 78 r.p.m. 3-Speed
Cartridge :	EPC-42STAD (Solid State)
Stylus :	EPS-25STSD (Diamond)
Stylus Pressure :	3.5 g

POWER SUPPLY :	AC 100～115, 115～130, 200～225, 225～250 50/60 Hz
POWER CONSUMPTION :	32 W

WEIGHT

Total :	17.1 kg	37 lb.	11 oz.
Center :	10.7 kg	23 lb.	9 oz.
Speaker (each) :	3.2 kg	7 lb.	1 oz.

DIMENSIONS (W×H×D)

Center :	449mm×228mm×417mm (17 11/16″ × 9″ × 16 7/16″)
Speaker :	285mm×455mm×135mm (11 1/4″ × 17 15/16″ ×5 5/16″)

(Specifications subject to change without notice.)

MATSUSHITA ELECTRIC
MATSUSHITA ELECTRIC TRADING CO., LTD.
P. O. Box 288, Central Osaka, Japan

ORDER NO. SD-353

DISASSEMBLY INSTRUCTIONS

■ TO REMOVE RECORD CHANGER

1. Remove record changer hole cover.
2. Turn one (1) spring clip from record changer hole, as illustrated in fig. 1.
3. Lift up record changer from cabinet.
4. Remove two (2) plugs.
5. Lift out record changer from cabinet.

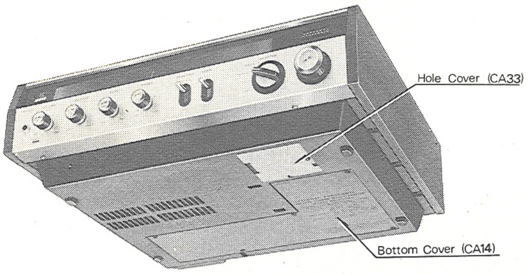

Hole Cover (CA33)
Bottom Cover (CA14)

Fig. 1

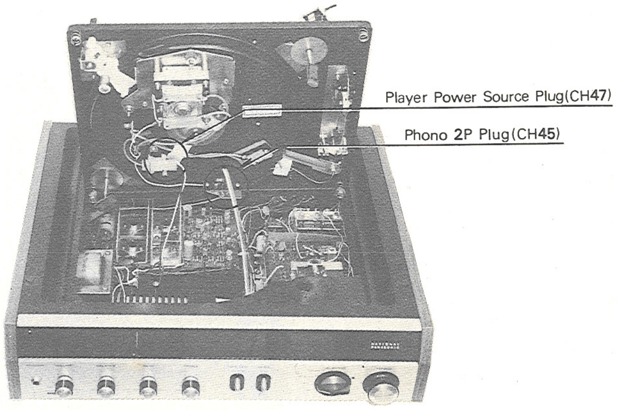
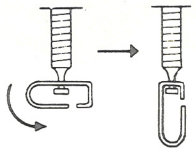

Player Power Source Plug(CH47)
Phono 2P Plug(CH45)

Fig. 2



DIAL CORD STRINGING GUIDE

NOTES:

1. Dial cord length is 100''
2. Tuning gang is positioned at maximum capacity.
3. Arrow marks (1-10) indicate correct order and direction of stringing dial cord.
4. Cement dial cord ends.

TO MOUNT DIAL POINTER

1. Set tuning gang to fully closed position.
2. Set dial pointer to start point of dial scale.
3. Attach dial cord to dial pointer.

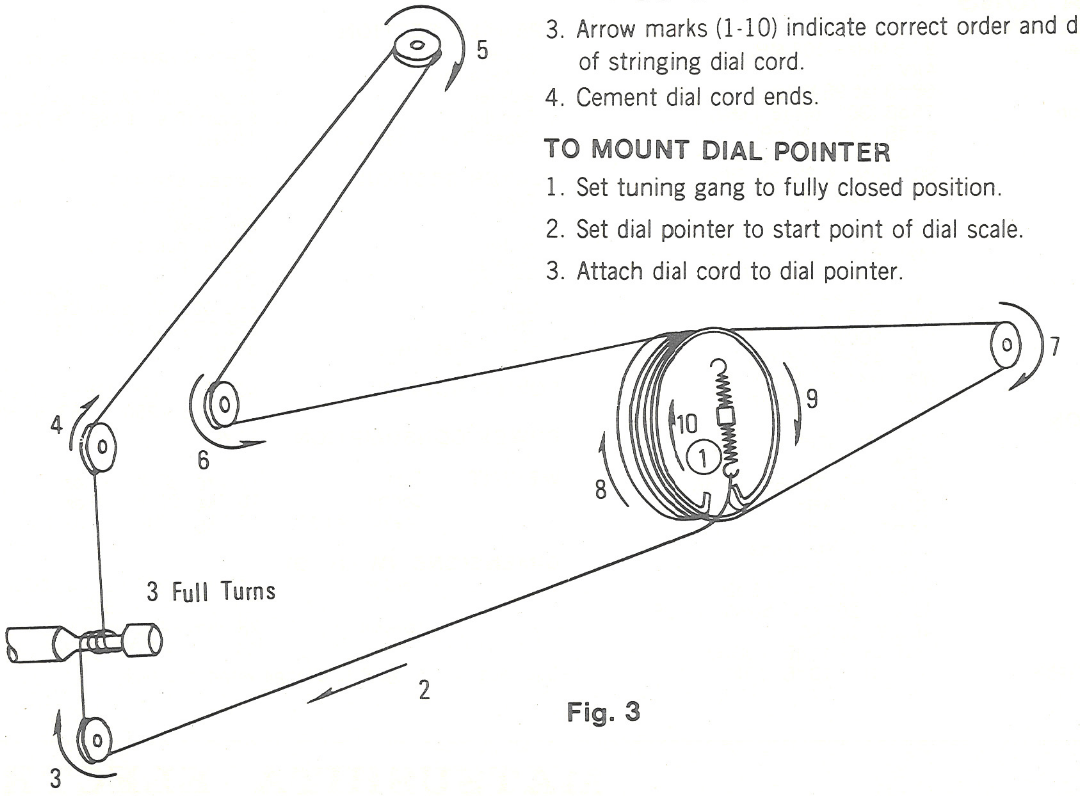

5
4
6
7
9
10
1
8
3 Full Turns
2
3

Fig. 3

LOCATION OF PARTS

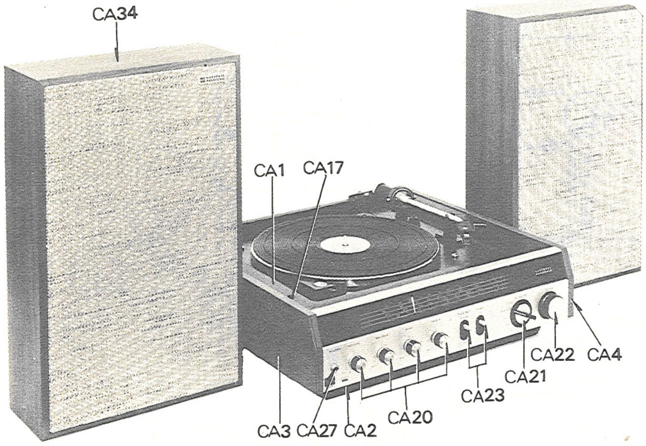

CA34
CA1
CA17
CA22
CA4
CA21
CA23
CA20
CA3
CA27
CA2

Fig. 4

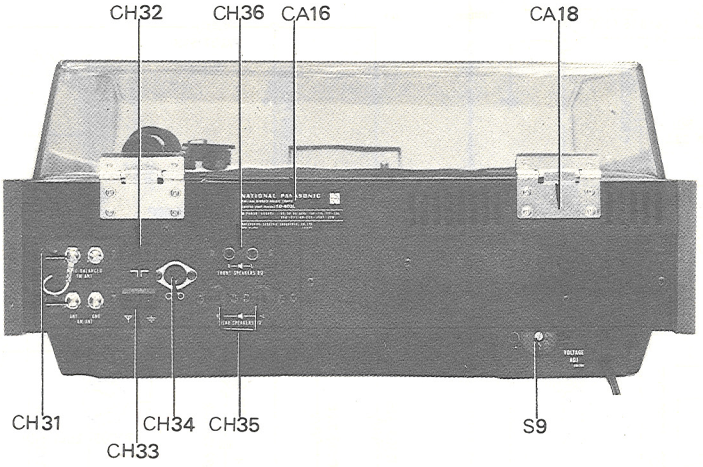

CH32
CH36
CA16
CA18
CH31
CH34
CH35
CH33
S9

Fig. 5

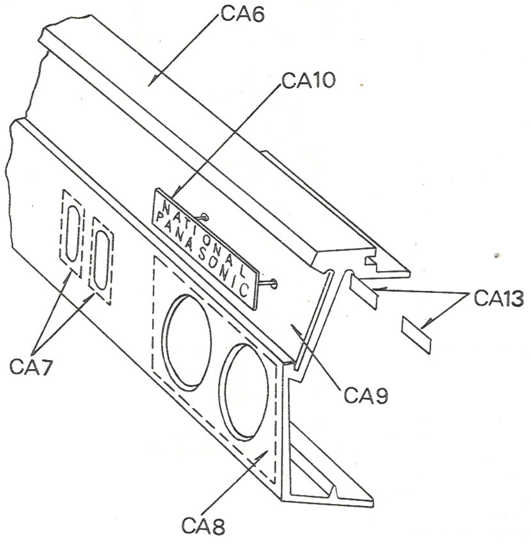

CA6
CA10
NATIONAL PANASONIC
CA13
CA7
CA9
CA8

Fig. 6 PANEL ESCUTCHEON

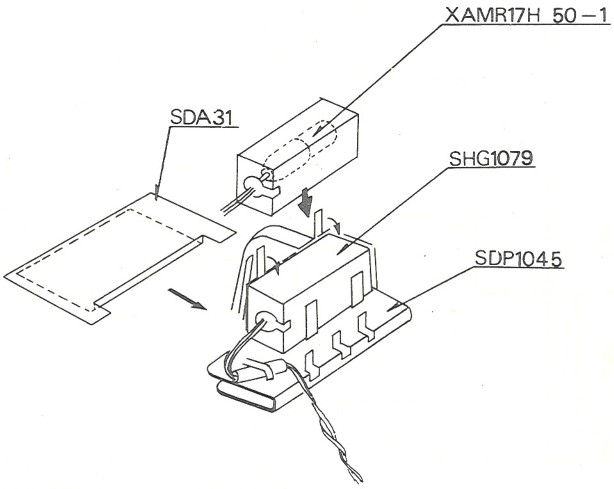

XAMR17H 50-1
SDA31
SHG1079
SDP1045

Fig. 7 DIAL POINTER

SCHEMATIC DIAGRAM MODEL SAP-413

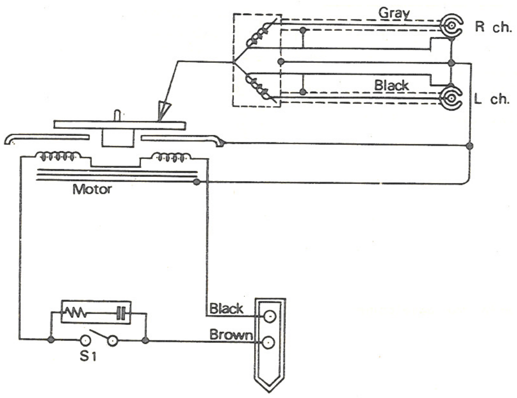

Gray
R ch.
Black
L ch.
Motor
Black
Brown
S1

Fig. 8

ALIGNMENT INSTRUCTIONS

FREQUENCY & DISTANCE ON DIAL SCALE

To accurately align the proper frequencies to the dial scale, refer to Table and mark the edge of the dial scale plate accordingly, using the "Start Point" mark on the dial scale as a reference point.

TABLE

Band	Frequency	Distance from "Start Point"	
LW	145 kHz	5.5mm	2 11/64″
	285 kHz	166.2mm	65 7/16″
MW	550 kHz	22.6mm	1/8″
	1500 kHz	160.3mm	63 7/64″
SW	5.9 MHz	5.0mm	2″
	18 MHz	167.2mm	6 19/32″
FM	90 MHz	33.9mm	1 11/32″
	104 MHz	165.9mm	65 5/16″

1. AM/FM-IF & RF ALIGNMENT

AM-IF & RF ALIGNMENT (Refer to Fig. 10 & 11)

STEP	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1	Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz (400 Hz Mod.)	Point of noninterference. (on/about 600 kHz)	Output meter across EXT Speaker Jack (L) (Imp. 16 ·)	T202 (1st IFT) T204 (2nd IFT) T207 (3rd IFT)	Adjust for maximum output
2	〃	550 kHz (400 Hz Mod.)	550 kHz	〃	L107 (OSC Coil) L801 (ANT Coil)	Adjust for maximum output by sliding coil (L801) along ferrite core.
3	〃	1500 kHz (400 Hz Mod.)	1500 kHz	〃	CT8 (OSC Trimmer) CT5 (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).
4	〃	5.9 MHz (400 Hz Mod.)	5.9 MHz	〃	L106 (OSC Coil) L802 (ANT Coil)	Adjust for maximum output by sliding coil (L802) along ferrite core.
5	〃	18 MHz (400 Hz Mod.)	18 MHz	〃	CT7 (OSC Trimmer) CT6 (OSC Trimmer)	Adjust for maximum output. Repeat steps (4) and (5).
6	〃	145 kHz (400 Hz Mod.)	145 kHz	〃	L107 (OSC Coil) T102 (ANT Coil)	Adjust for maximum output.
7	〃	285 kHz (400 Hz Mod.)	285 kHz	〃	CT9 (OSC Trimmer) CT4 (OSC Trimmer)	Adjust for maximum output. Repeat steps (6) and (7).

Notes: 1. Cement antenna bobbin with wax after completing alignment.
2. Make certain that speaker system is connected to the tuner when alignment.

FM-IF AND DETECTOR ALIGNMENT WITH OSCILLOSCOPE (Refer to Fig. 9, 11)

STEP	SWEEP GENERATOR COUPLING	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1	High side thru. 0.001 μF to point TP1 terminal. Common to chassis.	Point of non-interference (ON/about 89 MHZ)	Connect vert. amp. of scope thru. biode to point TP201. Common to chassis.	T101 (FM 1st IFT) T201 (FM 2nd IFT) T203 (FM 3rd IFT) T205 (FM 4th IFT)	Turn T101 (secondary), T206 upwards and adjust T101–T205 for maximum amplitude.
2				T101 (FM 1st IFT) T201 (FM 2nd IFT) T203 (FM 3rd IFT) T205 (FM 4th IFT)	Adjust T101 (secondary), T203 for maximum amplitude and symmetrical curve. (Refer to fig. 9)
3			Connect vert. amp. of scope to point TP203. Common to chassis.	T205 (FM 4th IFT) T206 (FM Disc. IFT)	Adjust T206 so that 10.7 MHz marker is at the center and proper linearity between 100 kHz markers. (Refer to fig. 9)

Note: Remove line cord antenna from FM external terminal when aligning.

FM-RF ALIGNMENT (Refer to Fig. 11)

STEP	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUST	REMARKS
1	Connect to EXT FM antenna terminal through FM dummy antenna Common to chassis	90 MHz (400 Hz Mod)	90 MHz	Output meter across EXT Speaker Jack (L)	L103 (FM OSC Coil) L101 (FM ANT Coil) L102 (FM Detector Coil)	Adjust for maximum output
2	〃	106 MHz (400 Hz Mod)	106 MHz	〃	CT3 (FM OSC Trimmer) CT1 (FM ANT Trimmer) CT2 (FM Detector Trimmer)	Adjust for maximum output Repeat steps (1) and (2)

Note: As three output responses will be present proper tuning is the center frequency.

2. FM-STEREO ALIGNMENT (Refer to Fig. 11)

19 kHz AMP. and STEREO EYE LIGHTING LEVEL ALIGNMENT

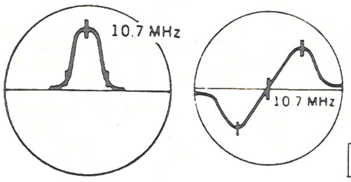
EQUIPMENT CONNECTION		ADJUST	REMARKS
SIGNAL GENERATOR	OSCILLOSCOPE		
Connect to EXT FM antenna terminal through Dummy antenna.	Connect vert Amp of scope to point TP302 Common to chassis	T301 (19 kHz Pick-up Coil) T302 (38 kHz Doubler Coil) T303 (38 kHz Switching Coil)	Adjust T301, T302, T303 for maximum oscilloscope pattern of 38 kHz.

ALIGNMENT CIRCUIT	ADJUSTMENT	REMARKS
LIGHTING LEVEL (Muting Level)	RV301	Adjust RV301 for the lighting level on SG is 22 dB.

SEPARATION ALIGNMENT

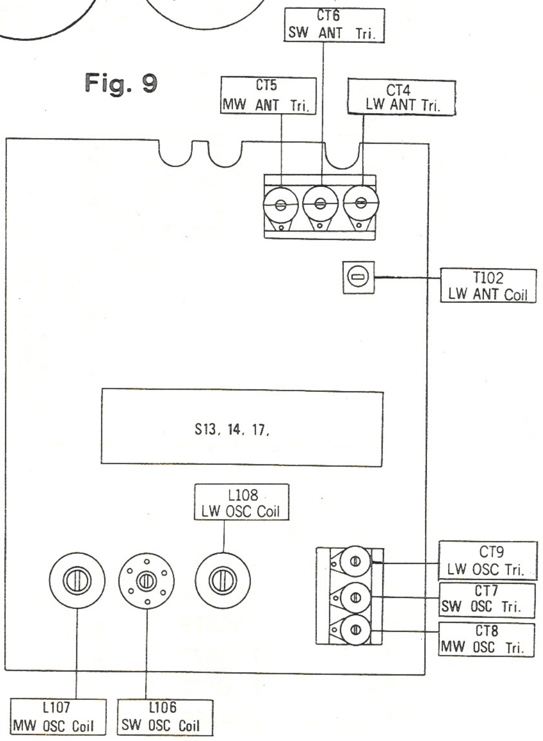
ALIGNMENT CIRCUIT	ADJUSTMENT	REMARKS
SEPARATION	T303	Adjust T303 for the minimum indication on VTVM from the right side output when the left side of stereo modulator is modulated

ALIGNMENT POINTS

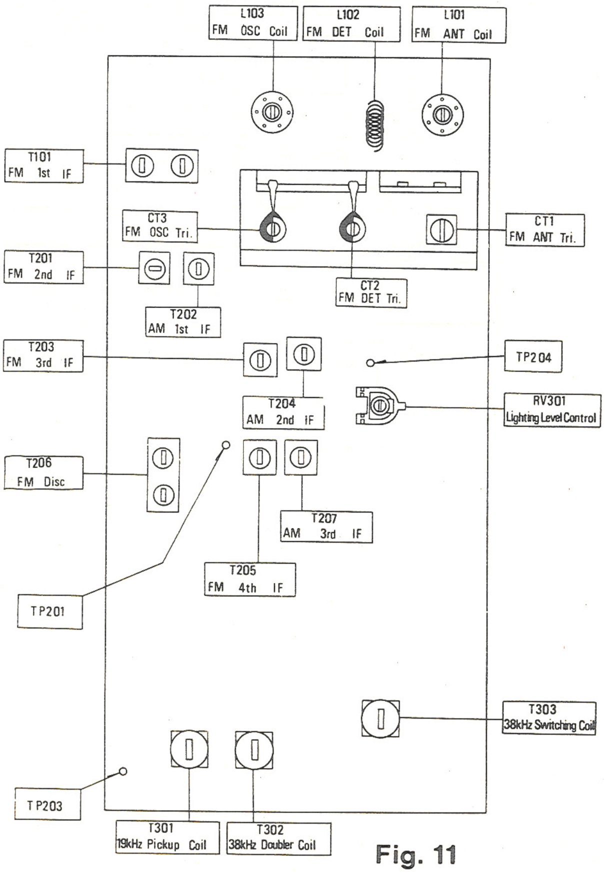


10.7 MHz
10.7 MHz

Fig. 9



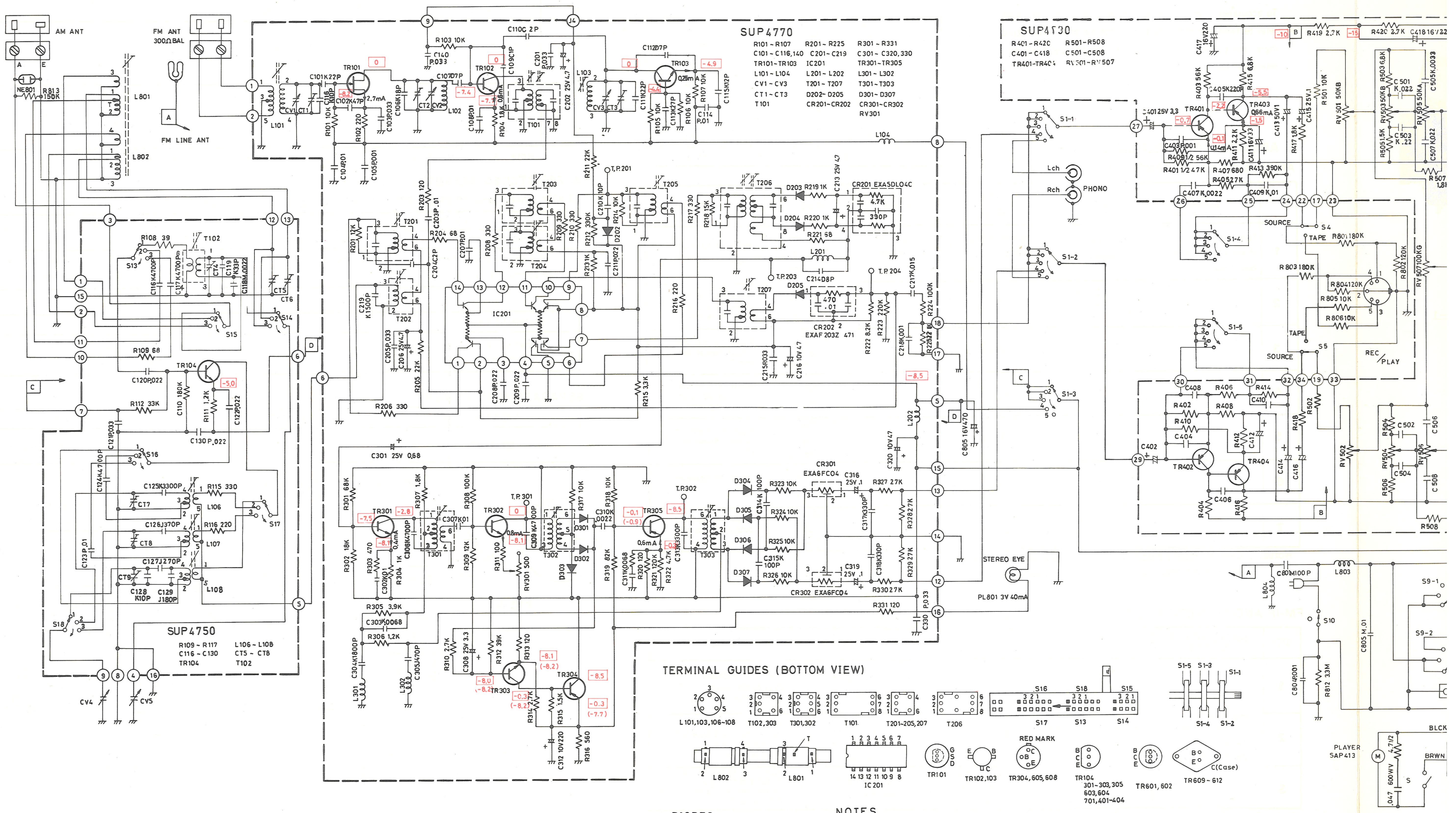
CT6 SW ANT Tri.
CT5 MW ANT Tri.
CT4 LW ANT Tri.
T102 LW ANT Coil
S13, 14, 17.
L108 LW OSC Coil
CT9 LW OSC Tri.
CT7 SW OSC Tri.
CT8 MW OSC Tri.
L107 MW OSC Coil
L106 SW OSC Coil



L103 FM OSC Coil
L102 FM DET Coil
L101 FM ANT Coil
T101 FM 1st IF
CT3 FM OSC Tri.
CT1 FM ANT Tri.
T201 FM 2nd IF
CT2 FM DET Tri.
T202 AM 1st IF
T203 FM 3rd IF
TP204
T204 AM 2nd IF
RV301 Lighting Level Control
T206 FM Disc
T207 AM 3rd IF
T205 FM 4th IF
TP201
T303 38kHz Switching Coil
TP203
T301 19kHz Pickup Coil
T302 38kHz Doubler Coil

Fig. 11

SCHEMATIC DIAGRAM MODEL SS-8030L


AM ANT
FM ANT 300Ω BAL
FM LINE ANT
NE801
R813 150K
L801
L802
SUP4770
R101 ~ R107 R201 ~ R225 R301 ~ R331
C101 ~ C116,140 C201 ~ C219 C301 ~ C320, 330
TR101 ~ TR103 IC201 TR301 ~ TR305
L101 ~ L104 L201 ~ L202 L301 ~ L302
CV1 ~ CV3 T201 ~ T207 T301 ~ T303
CT1 ~ CT3 D202 ~ D205 D301 ~ D307
T101 CR201 ~ CR202 CR301 ~ CR302
RV301
SUP4730
R401 - R420 R501 - R508
C401 - C418 C501 - C508
TR401 - TR404 RV501 - RV507
SUP4750
R109 ~ R117 L106 ~ L108
C116 ~ C130 CT5 ~ CT8
TR104 T102
TR101
TR102
TR103
TR104
IC201
TR301
TR302
TR303
TR304
TR305
TR401
TR402
TR403
TR404
T.P.201
T.P.202
T.P.203
T.P.204
T.P.301
T.P.302
CR201 EXA5DL04C
CR202 EXAF203Z 471
CR301 EXA6FC04
CR302 EXA6FC04
Lch
Rch
PHONO
SOURCE
TAPE
REC / PLAY
STEREO EYE
PL801 3V 40mA
S1-1
S1-2
S1-3
S1-4
S1-5
S4
S5
S9-1
S9-2
S10
S13
S14
S15
S16
S17
S18
CV4
CV5
TERMINAL GUIDES (BOTTOM VIEW)
L101,103,106~108
T102,303
T301,302
T101
T201~205,207
T206
S16
S18
S15
S17
S13
S14
S1-5 S1-3 S1-1
S1-4 S1-2
L802
L801
IC 201
TR101
TR102,103
RED MARK
TR304,605,608
TR104 301~303,305 603,604 701,401~404
TR601, 602
C(Case)
TR609 ~ 612
PLAYER SAP413
BLCK
BRWN

TRANSISTORS

TR 101	2SK19	TR 601,602	2SC1000
TR 102,103	2SC920	TR 605,606	2SB22
TR 104	2SC829	TR 607,608	2SD30
TR 301~303	2SC828	TR 609~612	2SB481
TR 304	2SB172	TR 701	2SA683
TR 305,401-404 603,604	2SA666		

DIODES

D 301~303	MA26-1
D 202,205	OA70
D 203,204	2OA79
D 304~307	2OA70
D 701	IS1850R
D 702	02Z8.2A

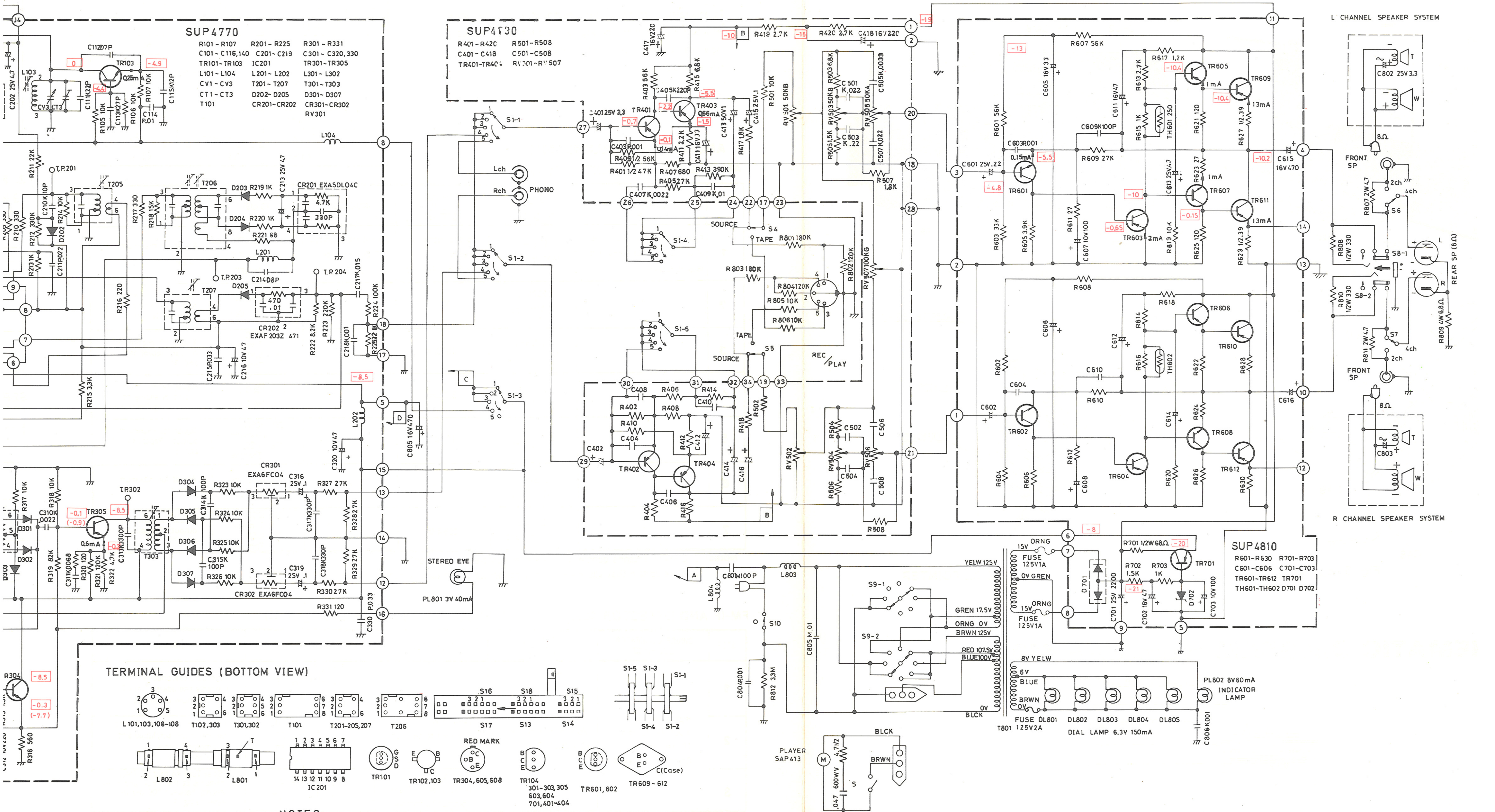
NOTES

1. —○— Corresponds to the number on the printed wiring boards.
2. DC Voltage measurements are taken with a circuit tester(100KΩ/V) from chassis ground.

   ☐ ---Shows the voltage without any signal.

   ( )---Shows the voltage with FM Stereo signal.
3. S1-1~S1-5, S13~S18----Selector now in "LW" position, moves LW→SW→MW→FMAUTO→PHONO
4. S4.S5---TAPE MONITOR switch. now in "SOURCE" position.
5. S6 S7---MODE switch. now in "4ch" position, moves 4ch→2ch.
6. S8----HEAD PHONES switch.
7. S9-1,S9-2--Voltage adjuster switch now in "100~115" position, moves 100~115→115~130→200~225→225~250.
8. S10---POWER SOURCE switch now in "ON" position, moves ON→OFF.

30L


SUP4770
R101~R107 R201~R225 R301~R331
C101~C116,140 C201~C219 C301~C320,330
TR101~TR103 IC201 TR301~TR305
L101~L104 L201~L202 L301~L302
CV1~CV3 T201~T207 T301~T303
CT1~CT3 D202~D205 D301~D307
T101 CR201~CR202 CR301~CR302
RV301
SUP4130
R401~R420 R501~R508
C401~C418 C501~C508
TR401~TR404 RV501~RV507
SUP4810
R601~R630 R701~R703
C601~C606 C701~C703
TR601~TR612 TR701
TH601~TH602 D701 D702
L CHANNEL SPEAKER SYSTEM
R CHANNEL SPEAKER SYSTEM
FRONT SP
REAR SP (8Ω)
PHONO
Lch
Rch
SOURCE
TAPE
REC
PLAY
STEREO EYE
PL801 3V 40mA
PL802 8V 60mA
INDICATOR LAMP
DIAL LAMP 6.3V 150mA
DL801 DL802 DL803 DL804 DL805
FUSE 125V2A
T801
PLAYER SAP413
BLCK
BRWN
YELW 125V
GREN 17.5V
ORNG 0V
BRWN 125V
RED 107.5V
BLUE 100V
8V YELW
6V BLUE
0V BRWN
15V ORNG
FUSE 125V1A
0V GREN
S1-1 S1-2 S1-3 S1-4 S1-5
S4 S5 S6 S7 S8-1 S8-2 S9-1 S9-2 S10
TERMINAL GUIDES (BOTTOM VIEW)
L101,103,106~108
T102,303
T301,302
T101
T201~205,207
T206
S16 S18 S15
S17 S13 S14
S1-5 S1-3 S1-1
S1-4 S1-2
L802
L801
IC 201
TR101
TR102,103
RED MARK
TR304,605,608
TR104
301~303,305
603,604
701,401~404
TR601,602
TR609~612
C(Case)

2SC1000	
2SB22	
2SD30	
2SB481	
2SA683	

DIODES

D 301~303	MA26-1
D 202,205	OA70
D 203, 204	2OA79
D 304~307	2OA70
D 701	IS1850R
D 702	02Z8.2A

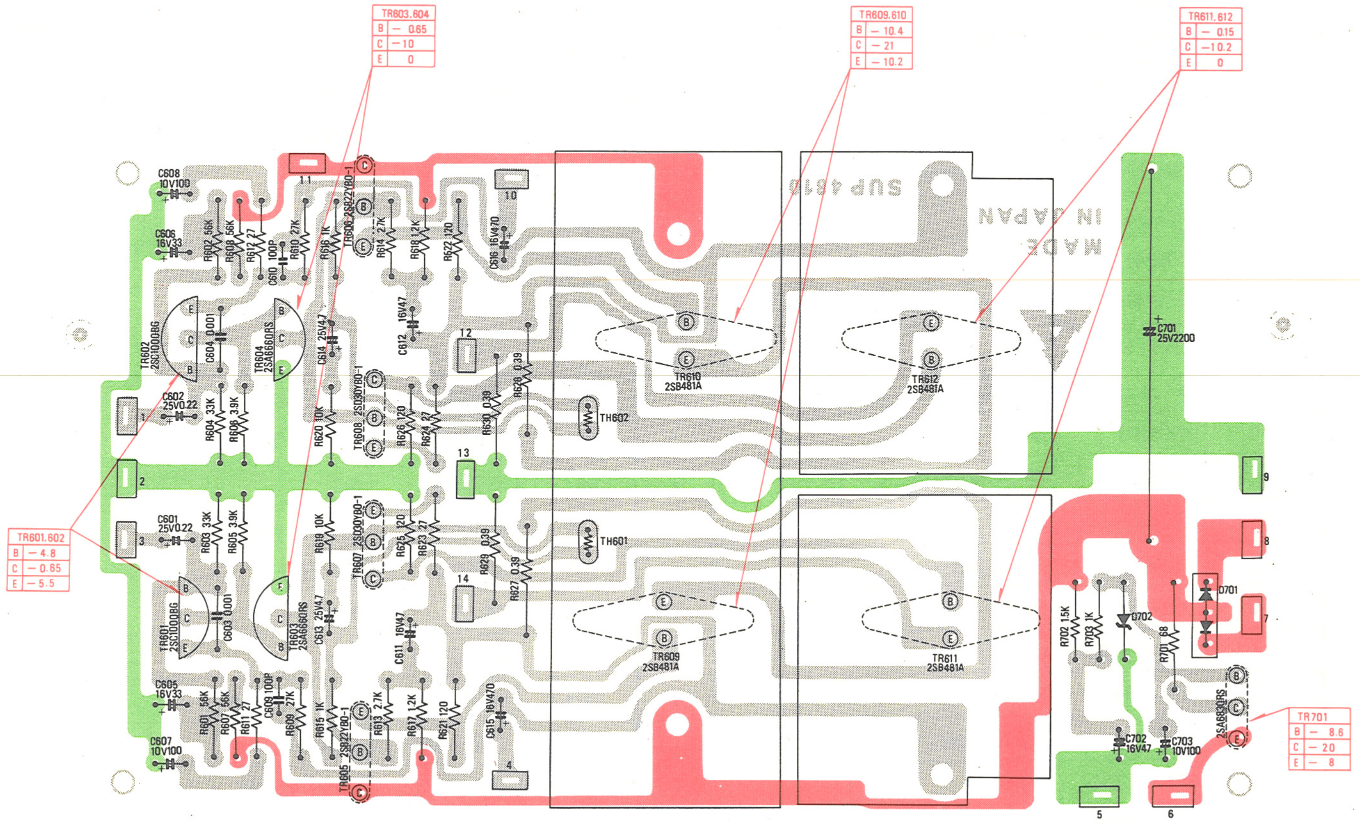
NOTES

1. —○— Corresponds to the number on the printed wiring boards.
2. DC Voltage measurements are taken with a circuit tester (100KΩ/V) from chassis ground.
   ▭ ---Shows the voltage without any signal.
   ( )---Shows the voltage with FM Stereo signal.
3. S1-1~S1-5, S13~S18----Selector now in "LW" position, moves LW→SW→MW→FMAUTO→PHONO
4. S4,S5---TAPE MONITOR switch. now in "SOURCE" position.
5. S6 S7---MODE switch. now in "4ch" position, moves 4ch→2ch.
6. S8----HEAD PHONES switch.
7. S9-1,S9-2--Voltage adjuster switch now in "100~115" position, moves 100~115→115~130→200~225→225~250.
8. S10 ---POWER SOURCE switch now in "ON" position, moves ON→OFF.

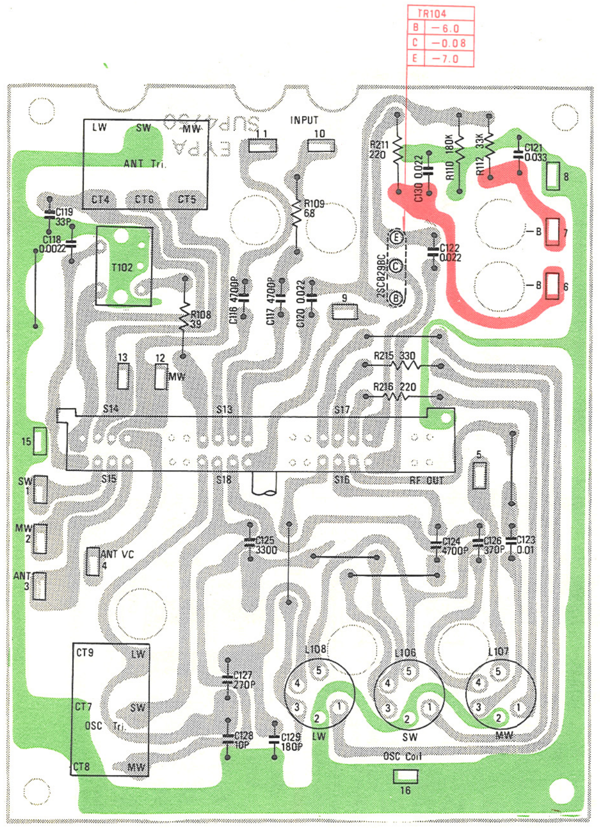
This schematic diagram might be modified with the development of technology.

CIRCUIT BOARD MODEL SS-8030L

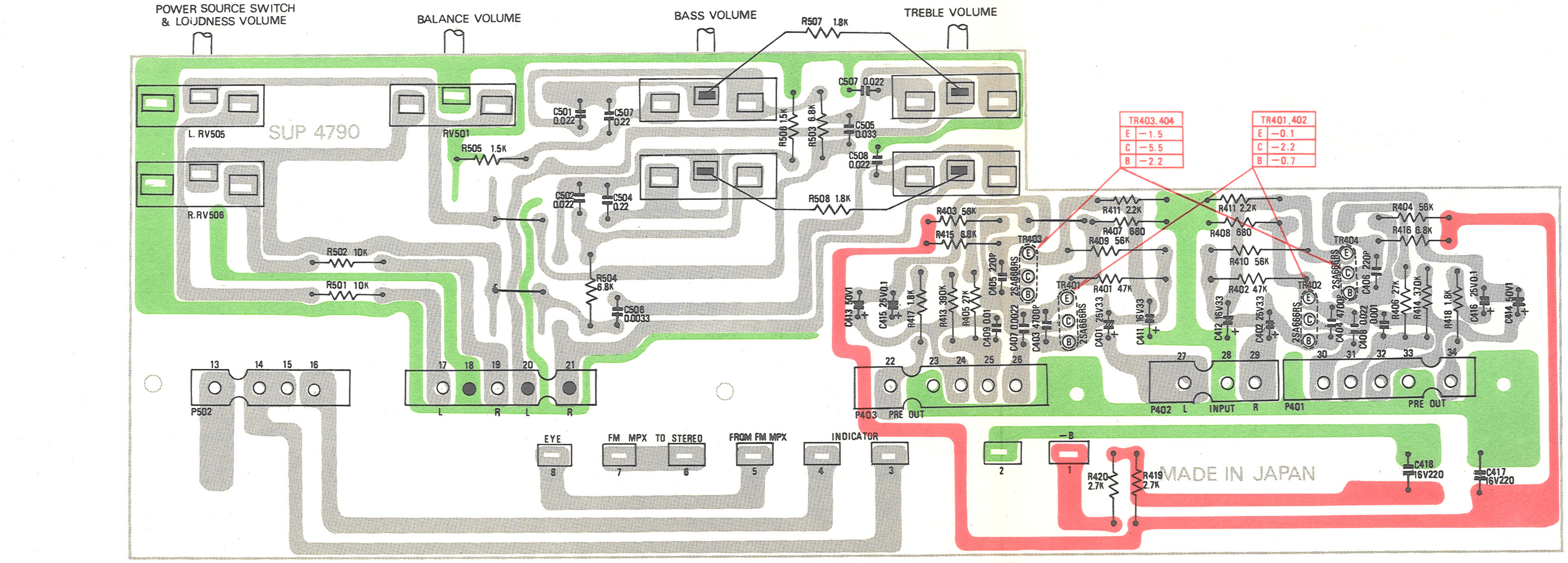
POWER AMP


TR603.604 B −0.65 C −10 E 0
TR609.610 B −10.4 C −21 E −10.2
TR611.612 B −0.15 C −10.2 E 0
TR601.602 B −4.8 C −0.65 E −5.5
TR701 B −8.6 C −20 E −8
SUP 4810
MADE IN JAPAN
TR610 2SB481A
TR612 2SB481A
TR609 2SB481A
TR611 2SB481A
TH602
TH601
C701 25V2200
D701
D702
C702 16V47
C703 10V100

MW, SW & LW

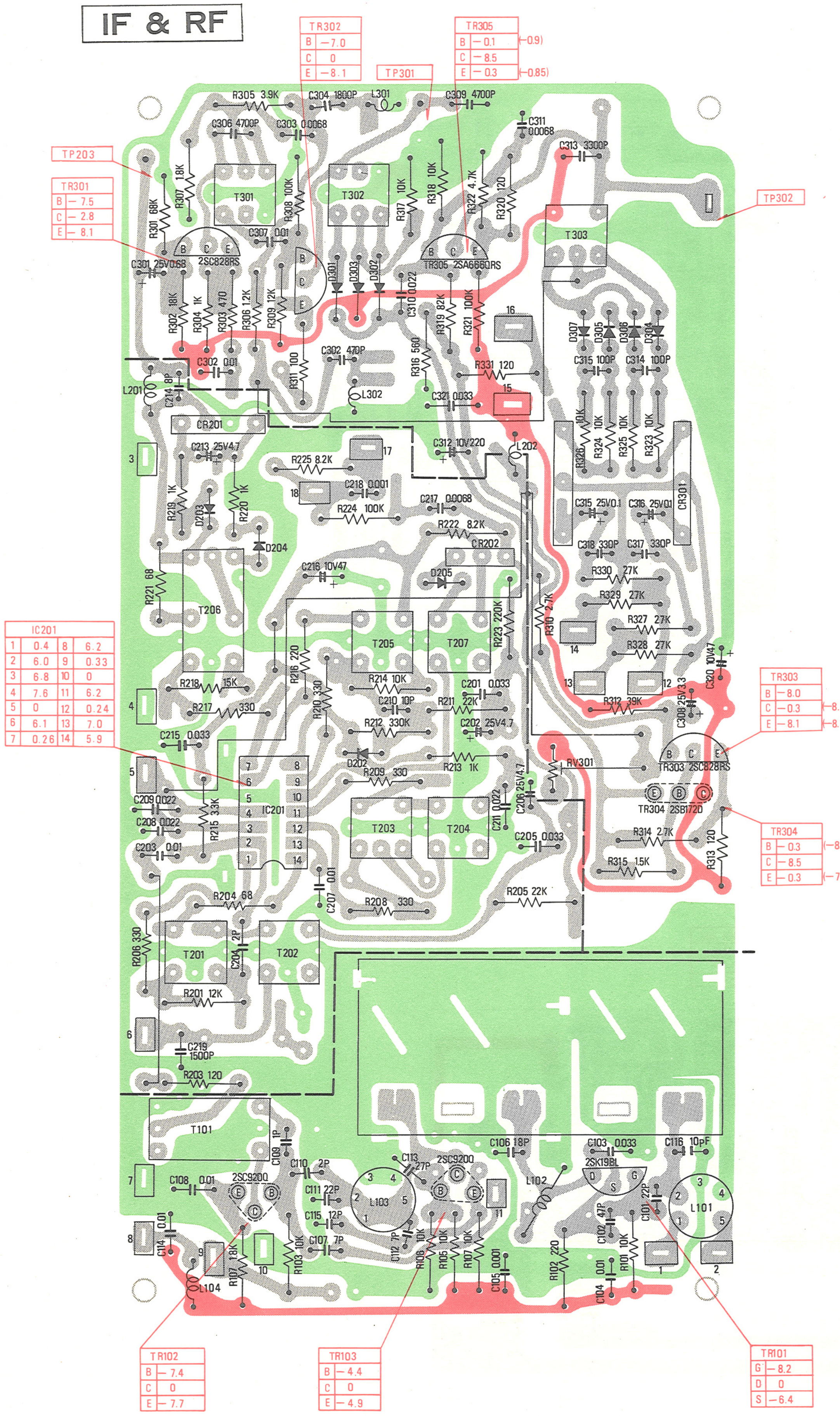

TR104 B −6.0 C −0.08 E −7.0
LW SW MW
ANT Tr
INPUT
CT4 CT6 CT5
T102
S14 S13 S17
S15 S16 S18
RF OUT
ANT VC
CT9 LW
CT7 SW
OSC Tr
CT8 MW
L108 L106 L107
OSC Coil
SUP 4750 EYPA

TONE CONTROL AMP


POWER SOURCE SWITCH & LOUDNESS VOLUME
BALANCE VOLUME
BASS VOLUME
TREBLE VOLUME
R507 1.8K
L. RV505
R.RV506
RV501
SUP 4790
R505 1.5K
R502 10K
R501 10K
R504 6.8K
R508 1.8K
TR403, 404 E −1.5 C −5.5 B −2.2
TR401, 402 E −0.1 C −2.2 B −0.7
P502
L R L R
EYE
FM MPX TO STEREO
FROM FM MPX
INDICATOR
P403 PRE OUT
P402 L INPUT R
P401 PRE OUT
MADE IN JAPAN
R420 2.7K
R419 2.7K
C418 16V220
C417 16V220

CIRCUIT BOARD MODEL SS-8030L

IF & RF

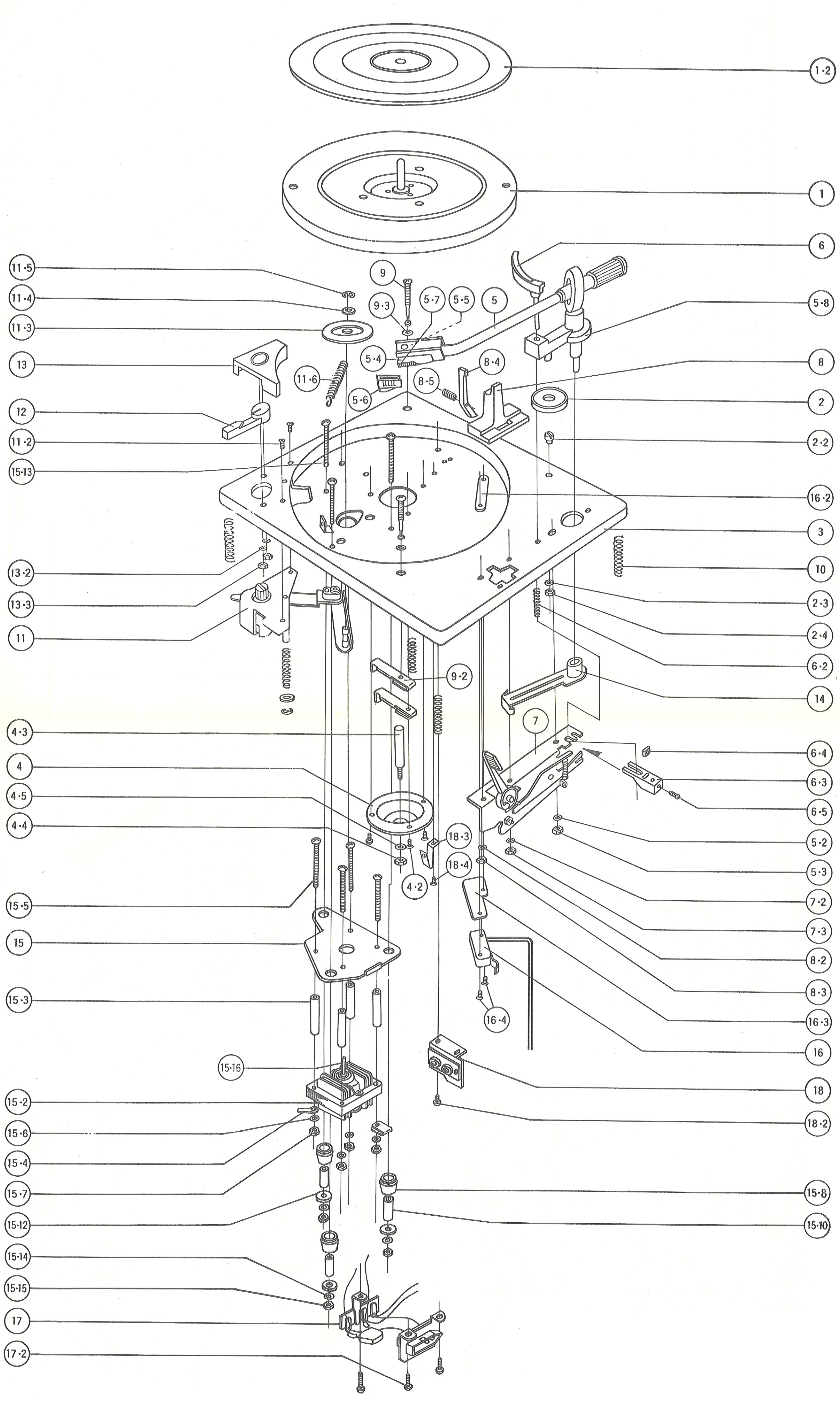


TR302 B -7.0 C 0 E -8.1
TP301
TR305 B -0.1 (-0.9) C -8.5 E -0.3 (-0.85)
TP203
TR301 B -7.5 C -2.8 E -8.1
TP302
IC201 1 0.4 2 6.0 3 6.8 4 7.6 5 0 6 6.1 7 0.26 8 6.2 9 0.33 10 0 11 6.2 12 0.24 13 7.0 14 5.9
TR303 B -8.0 C -0.3 (-8.2) E -8.1 (-8.2)
TR304 B -0.3 (-8.2) C -8.5 E -0.3 (-7.7)
TR102 B -7.4 C 0 E -7.7
TR103 B -4.4 C 0 E -4.9
TR101 G -8.2 D 0 S -6.4

PARTS LIST MODEL SAP-413

Ref. No.	Part No.	Description	Per Set (Pcs.)	Ref. No.	Part No.	Description	Per Set (Pcs.)
1	SF2E411-1E	T. T. Ass'y	1	9-3	SFP-EW1100	Washer	2
1-2	SFTG411-1E	T.T. Mat	1	10	SFQC411-1	Cushion Spring	4
2	SFWE154A	EP Adaptor	1	11	SFUK411-2A	Speed Selector Panel Ass'y	1
2-2	SFKA530	Adaptor	1	11-2	XTV3+60FU	Screw	2
2-3	XWA2BFU	Spring Washer	1	11-3	SFMI411-1E	Idler Ass'y	1
2-4	XNG2BB	Nut	1	11-4	SFXW551D2	Washer	1
3	SFBP411-1 E	Panel Ass'y	1	11-5	XUC3FU	E Washer	1
4	SFUP411-1	T. T. Shaft Panel	1	11-6	SFQH303-1	Idler Spring	1
4-2	XTV3+8FUS	Screw	3	12	SFKT411-2E	Selector Lever Ass'y	1
4-3	SFTJ423-1	T. T. Shaft	1	13	SFKC411-2	Cover, Selector Lever	1
4-4	XNG5EFU	Nut	1	13-2	XWA3BFU	Spring Washer	2
4-5	XWA5BFU	Spring Washer	1	13-3	XUG3BFUS	Nut	2
5	EPU-48SMCD	Pickup Ass'y	1	14	SFUP411-7E	Switch Lever Ass'y	1
5-2	XWA4BFUS	Spring Washer	1	15	SFMF413-1	Sub Plate	1
5-3	XNG4BFU	Nut	1	15-2	4W-13B	Motor	1
5-4	EPC-82SMBD	Cartridge	1	15-3	SFX0423-01	Tube	4
5-5	SFD-EV7803	Screw	2	15-4	SFER1C	Earth Terminal	1
5-6	———	Stylus Cover	1	15-5	XSN3+40FU	Screw	4
5-7	EPS-31STSD	Stylus	1	15-6	XWA3BFU	Spring Washer	4
5-8	FP-KD4800K	Turn Plate Ass'y	1	15-7	XNG3BFUS	Nut	4
5-9	SB-1-16	Steel Ball	3	15-9	SFGC154A1	Cushion Rubber	3
5-10	EP-EW5900	Nylon Washer	1	15-11	SFXO411-3	Tube	3
5-11	XUC5FY	E Washer	1	15-12	SFXW750-1	Washer	3
6	SFKR411-1E	Lift Ass'y	1	15-13	XSM3+25FUS	Screw	3
6-2	SFQA411-1	Lift Spring	1	15-14	XWA3BFU	Washer	3
6-3	SFUM623-1	Lift Fixing	1	15-15	XNG3BFUS	Nut	3
6-4	SFXN623-1	Nut	1	15-16	50Hz····SFMC413-5 60Hz··· SFMC413-6	Capstan	1
6-5	XSN3+10FU	Screw	1	16	SFDS-AM4214	Switch	1
7	SFUK411-1A	Control Panel Ass'y	1	16-2	SFUP040-8	Switch Panel	1
7-2	XWA3BFU	Spring Washer	1	16-3	SFUZ040-1	Insulator Sheet	1
7-3	XNG3BFUS	Nut	1	16-4	XSM3+18BFU	Screw	2
8	SFKC411-1	Control Cover	1	17	SFDA413-01	AC Cord Ass'y	1
8-2	XWA3BFU	Spring Washer	2	17-2	XTV3+6CFU	Screw	1
8-3	XNG3BFUS	Nut	2	17-4	XTV3+6CFU	Screw	1
8-4	SFUM411-1	Arm Clamper	1	18	SFUP413-1A	PU Socket Ass'y	1
8-5	SFQH411-1	Spring	1	18-2	XTV3+6CFU	Screw	1
9	SFXG411-1	Locking Screw	2	18-3	SFUP530-1	Lead Clamper	1
9-2	SFUP411-6	Spring Clip	2	18-4	XTV3+6CFU	Screw	1

EXPLODED VIEW OF PLAYER MODEL SAP-413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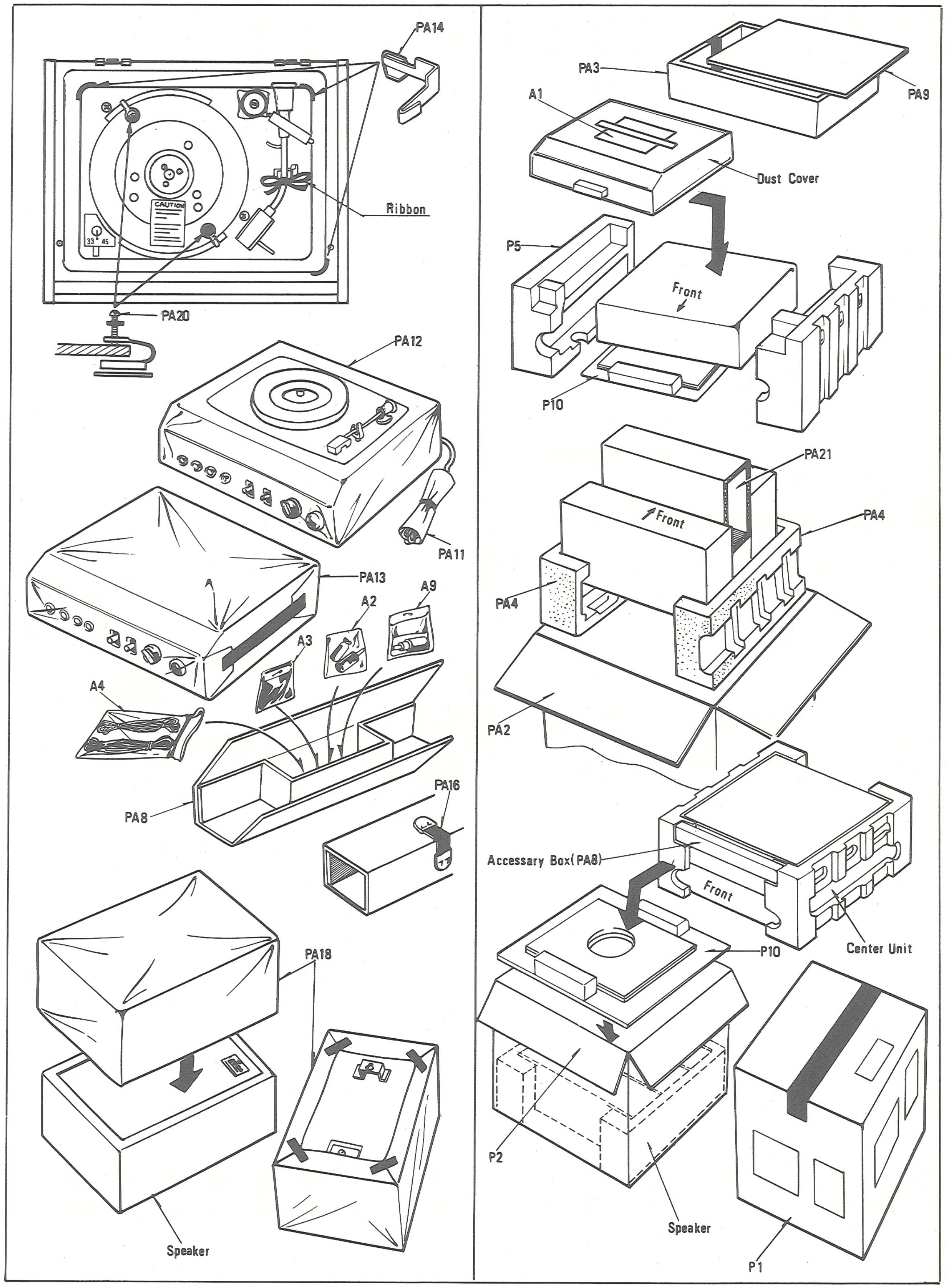
COMPONENT PACKING PROCEDURE



■ REPLACEMENT PARTS LIST

NOTES:

1 Part numbers indicated on most mechanical parts.
Please use this Part number for parts orders.
2 Ⓝ indicates the New Parts.
3 **X-Z** rank **X** rank parts will cover 80% of repair needs.
X+Y rank parts will cover 95% of repair needs.
Z rank parts are less necessary

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
IC TRANSISTORS AND DIODES				
IC201	AN203AA	FM IF & AM IF	1	X
TR101	2SK19BL	FM RF AMP	1	X
TR102	2SC920Q	FM Mixer AMP	1	X
TR103	2SC920Q	FM OSC	1	X
TR104	2SC829BC	AM Convertor	1	X
TR301	2SC828RS	FM Composit Signal Amp	1	X
TR302	2SC828RS	19kHz Amp	1	X
TR303	2SC828RS	38kHz Switching	1	X
TR304	2SB172D	Lighting	1	X
TR305	2SA666QRS	FM 38kHz Amp	1	X
TR401, 402	2SA666QRS	Pre Amp	2	X
TR601, 602	2SC1000BG	AF 1st Amp	2	X
TR603, 604	2SA666QRS	AF 2nd Amp	2	X
TR605, 606	2SB22YBO-1	Driver Amp	2	X
TR607, 608	2SD30YBO-1	Driver Amp	2	X
TR609~612	2SB481A-W	Power Transistor	4	X
TR701	2SA6830RS	Ripple Filter	1	X
D202	0A70	Temperature Compensator	1	X
D203, 204	20A79	FM Detector	1pair	X
D205	0A70	AM Detector	1	X
D301, 302	MA26-1	38kHz Doubler	2	X
D303	MA26-1	Temperature Compensator	1	X
D304~307	20A70	38kHz Switching	2pair	X
D701	SVD1S1850R	Rectifer	1	X
D702	SVD02Z8.2A	Stabilizer	1	X
THERMISTORS				
TH601, 602	ERTD2FGL251L	Temperature Compensator	2	X
COILS AND TRANSFORMERS				
L101	SLA4P7	FM ANT Coil	1	X
L102	SLD4Y17	FM Detector Coil	1	X
L103	SLO4P17	FM OSC Coil	1	X
L104, 201, 202	SLQX250-1	Choke Coil	3	Z
L106	SLO3P21	SW OSC Coil	1	Ⓝ X
L107	SLO2P1	MW OSC Coil	1	X
L301	ELQ393D599G	SCA Filter	1	Z
L302	ELQ103D599G	SCA Filter	1	Z
L801	SLF5G9	MW ANT Coil	1	X
L802		SW ANT Coil		
L803	SLH25	Choke Coil	1	Z
L804	SLQX250-1	Choke Coil	1	Z
T101	SLI4D107	FM 1st IF	1	X
T201	SLI4C301	FM 2nd IF	1	X
T202	SLI2C117	AM 1st IF	1	X
T203	SLI4C301	FM 3rd IF	1	X
T204	SLI2C101M	AM 2nd IF	1	X
T205	SLI4C301	FM 4th IF	1	X
T206	SLI4D503	FM Disc.	1	X
T207	SLI2C407	AM 3rd IF	1	X
T301	SLM1C3T-1	19kHz Pickup Coil	1	X
T302	SLM1C3T-1	38kHz Doubler Coil	1	X
T303	SLM1C7T-1	38kHz Switching Coil	1	X
T801	SLT5N85	Power Transformer	1	X
T102	SLA1C1	LW ANT Coil	1	Ⓝ X
L108	SLO1P5	LW OSC Coil	1	Ⓝ X
RESISTORS				
R101, 103, 105, 106, 107, 214, 317, 318, 323~326, 501, 502, 619, 620	ERD14TJ103	10kΩ, 1/4W, ± 5%, Carbon	20	Z
R102, 216, 116	ERD14TJ221	220Ω, 1/4W, ± 5%, Carbon	3	Z
R104, 307, 507, 417, 418, 507, 508	ERD14TJ182	1.8kΩ, 1/4W, ± 5%, Carbon	7	Z
R109, 204, 221	ERD14TJ680	68Ω, 1/4W, ± 5%, Carbon	3	Z
R110	ERD14TJ184	180kΩ, 1/4W, ± 5%, Carbon	1	Z
R111	ERD14TJ122	1.2kΩ, 1/4W, ± 5%, Carbon	1	Z
R112, 603, 604	ERD14TJ333	33kΩ, 1/4W, ± 5%, Carbon	3	Z
R115	ERD14TJ331	330Ω, 1/4W, ± 5%, Carbon	1	Z
R201, 309	ERD14TJ123	12kΩ, 1/4W, ± 5%, Carbon	2	Z
R203, 313, 320, 331, 621, 622, 625, 626	ERD14TJ121	120Ω, 1/4W, ± 5%, Carbon	8	Z
R205, 211	ERD14TJ223	22kΩ, 1/4W, ± 5%, Carbon	2	Z
R212	ERD14TJ334	330kΩ, 1/4W, ± 5%, Carbon	1	Z
R213, 219, 220, 304, 615, 616, 703	ERD14TJ102	1kΩ, 1/4W, ± 5%, Carbon	7	Z
R215	ERD14TJ332	3.3kΩ, 1/4W, ± 5%, Carbon	1	Z
R218, 510	ERD14TJ153	15kΩ, 1/4W, ± 5%, Carbon	3	Z
R222, 225	ERD14TJ822	8.2kΩ, 1/4W, ± 5%, Carbon	2	Z
R223, 225	ERD14TJ224	220kΩ, 1/4W, ± 5%, Carbon	2	Z
R224, 308, 321	ERD14TJ104	100kΩ, 1/4W, ± 5%, Carbon	3	Z
R301	ERD14TJ683	68kΩ, 1/4W, ± 5%, Carbon	1	Z
R302	ERD14TJ183	18kΩ, 1/4W, ± 5%, Carbon	1	Z
R303	ERD14TJ471	470Ω, 1/4W, ± 5%, Carbon	1	Z
R305, 605, 606	ERD14TJ392	3.9kΩ, 1/4W, ± 5%, Carbon	3	Z
R306, 617, 618	ERD14TJ122	1.2kΩ, 1/4W, ± 5%, Carbon	3	Z
R310, 314, 613, 614	ERD14TJ272	2.7kΩ, 1/4W, ± 5%, Carbon	4	Z
R311	ERD14TJ101	100Ω, 1/4W, ± 5%, Carbon	1	Z
R312	ERD14TJ393	39kΩ, 1/4W, ± 5%, Carbon	1	Z
R315, 702, 505, 506	ERD14TJ152	1.5kΩ, 1/4W, ± 5%, Carbon	4	Z
R316, 401, 402	ERD14TJ561	560Ω, 1/4W, ± 5%, Carbon	3	Z
R319	ERD14TJ823	82kΩ, 1/4W, ± 5%, Carbon	1	Z
R322	ERD14TJ472	4.7kΩ, 1/4W, ± 5%, Carbon	1	Z
R328, 329, 601, 602, 607, 608 403, 404	ERD14TJ563	56kΩ, 1/4W, ± 5%, Carbon	8	Z
R409, 410	ERD12TSJ563	56kΩ, 1/2W, ± 5%, Carbon	2	Y
R609, 610, 329, 330, 327, 328, 405, 406	ERD14JJ273	27kΩ, 1/4W, ± 5%, Carbon	8	Z
R611, 612, 623, 624	ERD14JJ270	27Ω, 1/4W, ± 5%, Carbon	4	Z
R627~630	ERX2ANKR39	0.39Ω, 2W, ±10%, Metal	4	Y
R701	ERG1ANJ680	68Ω, 1W, ± 5%, Solid	1	Z
R812	ERC12GK335Z	33MΩ, 1/2W, ±10%, Solid	1	Z
R807, 811	ERM2P4R7	4.7Ω, 2W, ±10%, Wire	2	Y
R809	ERM4P6R8	6.8Ω, 1/4W, ±10%, Wire	1	Y
R803, 804	ERD14TJ103	10kΩ, 1/4W, ± 5%, Carbon	2	Z
R812, 813	ERD14TJ104	100kΩ, 1/4W, ± 5%, Carbon	2	Z
R801, 802	ERD14TJ154	150kΩ, 1/4W, ± 5%, Carbon	2	Z
R808, 810	ERD12TJ331	330Ω, 1/2W, ± 5%, Carbon	2	Z
R108	ERD14TJ390	39Ω, 1/4W, ± 5%, Carbon	1	Z
R401, 402	ERD12TSJ473	47kΩ, 1/2W, ± 5%, Carbon	2	Z
R407, 408	ERD14TJ681	680Ω, 1/4W, ± 5%, Carbon	2	Z
R411, 412	ERD14TJ222	2.2kΩ, 1/4W, ± 5%, Carbon	2	Z
R413, 414	ERD14TJ394	390kΩ, 1/4W, ± 5%, Ceramic	2	Z
R415, 416, 503, 504	ERD14TJ682	6.8kΩ, 1/4W, ± 5%, Ceramic	4	Z
R419, 420	ERD14TJ272	68kΩ, 1/4W, ± 5%, Ceramic	2	Z
VARIABLE RESISTORS				
RV501, 502	EVFNOAL25B54	50kΩ (B), Bass Volume	1	X
RV503, 504	EVFNOAL25A54	50kΩ (A), Treble Volume	1	X
RV505, 506	EVFN1DL25B54	50kΩ (A), Loudness Volume	1	Ⓝ X
RV507	EVCS2AL25G15	100kΩ (G), Balance Volume	1	X

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
CAPACITORS				
C101	ECCD1H220K	22pF, 50WV, ±10%, Ceramic	1	Z
C102	ECCD1H470K	47pF, 50WV, ±10%, Ceramic	1	Z
C106	ECCD1H180K	18pF, 50WV, ±10%, Ceramic	1	Z
C118	ECKE1H222MD	0.0022μF, 50WV, ±20%. Ceramic	1	Z
C119	ECCD1H330K	33pF, 50WV, ±10%, Ceramic	1	Z
C127	ECQS1271JZ	270pF, 100WV, ± 5%, Polyethylene	1	Z
C129	ECQS1181JZ	180pF, 100WV, ± 5%, Polyethylene	1	Z
C103, 140, 201, 205, 215, 330	ECKE1H333PF	0.033μF, 50WV, $^{+100}_{-0}$%, Ceramic	6	Z
C104, 108, 114, 121, 203, 207	ECKE1H103PF	0.01μF, 50WV, $^{+100}_{-0}$%, Ceramic	6	Z
C105, 403, 404 603, 604	ECKD1H102PF	0.001μF, 50WV, $^{+100}_{-0}$%, Ceramic	5	Z
C106	ECCD1H040C	4pF, 50WV, ±0.25pF, Ceramic	1	Z
C107, 112	ECCD1H070D	7pF, 50WV, ±0.5pF, Ceramic	2	Z
C109	ECCD1H010C	1pF, 50WV, ±0.25pF, Ceramic	1	Z
C113	ECCD1H270K	27pF, 50WV, ±10%, Ceramic	1	Z
C115	ECCD1H120K	12pF, 50WV, ±10%, Ceramic	1	Z
C116, 117, 124	ECQS1472KZ	4700pF, 100WV, ±10%, Polyethylene	3	Z
C120, 122, 130, 208, 209, 211	ECKE1H223PF	0.022μF, 50WV, $^{+100}_{-0}$%, Ceramic	6	Z
C123	ECKE1H103PF	0.01μF, 50WV, $^{+100}_{-0}$%, Ceramic	1	Z
C125, 313	ECQS1332KZ	3300pF, 100WV, ±10%, Polyethylene	2	Z
C126	ECQS1371JZ	370pF, 100WV, ± 5%, Polyethylene	1	Z
C202, 206, 213, 613, 614	ECEA25V4R7L	4.7μF, 25WV, Electrolytic	5	Y
C204, 110	ECCD1H020C	2pF, 50WV, ±0.25pF, Ceramic	2	Z
C210, 116, 128	ECCD1H100K	10pF, 50WV, ±10%, Ceramic	3	Z
C214	ECCD1H080D	8pF, 50WV, ±0.5%, Ceramic	1	Z
C216, 320	ECEA10V47L	47μF, 10WV, Electrolytic	2	Y
C217, 303, 311	ECQG05682KZ	0.0068μF, 50WV, ±10%, Polyester	3	Z
C218, 806	ECQG05102KZ	0.001μF, 50WV, ±10%, Polyester	2	Z
C219	ECQS1152KZ	1500pF, 100WV, ±10%, Polyethylene	1	Z
C301	ECAG25ER68L	0.68μF, 25WV, Electrolytic	1	Y
C302, 307, 409, 410	ECQG05103KZ	0.01μF, 50WV, ±10%, Polyester	4	Z
C304	ECQS1182KZ	1800pF, 100WV, ±10%, Polyethylene	1	Z
C305	ECQS1471JZ	470pF, 100WV, ± 5%, Polyethylene	1	Z
C306, 309	ECQS1472KZ	4700pF, 100WV, ±10%, Polyethylene	2	Z
C308, 401, 402	ECEA25V3R3L	3.3μF, 25WV, Electrolytic	3	Y
C310, 407, 408	ECQG05222KZ	0.0022μF, 50WV, ±10%, Polyester	3	Z
C312	ECEA10V220L	220μF, 10WV, Electrolytic	1	Y
C314, 315, 609, 610	ECCD1H101K	100pF, 50WV, ±10%, Ceramic	4	Z
C316, 319, 415, 416	ECAG25ER1L	1μF, 25WV, Electrolytic	4	Y
C317, 318	ECCD1H331K	330pF, 50WV, ±10%, Ceramic	2	Z
C111, 405, 406	ECCD1H221K	220pF, 50WV, ±10%, Ceramic	3	Z
C601, 602	ECAG25ER22L	0.22μF, 25WV, Electrolytic	2	Y
C615, 616	ECEA16V470L	470μF, 16WV, Electrolytic	2	Y
C413, 414	ECEA50V1L	1μF, 50WV, Electrolytic	2	Y
C417, 418	ECEA16V220L	220μF, 16WV, Electrolytic	2	Y
C501, 502, 507, 508	ECQG05223KZ	0.022μF, 50WV, ±10%, Polyester	4	Z
C503, 504	ECQG05224KZ	0.22μF, 50WV, ±10%, Polyester	2	Z
C505, 506	ECQG05332KZ	0.0033μF, 50WV, ±10%, Polyester	2	Z
C605, 606, 411, 412	ECEA16V33L	33μF, 16WV, Electrolytic	4	Y
C607, 608, 703	ECEA10V100L	100μF, 10WV, Electrolytic	3	Y
C611, 612, 702	ECEA16V47L	47μF, 16WV, Electrolytic	3	Y
C701	ECEB25V2200Z	2200μF, 25WV, Electrolytic	1	Ⓝ Y
C805	ECQH10103MZ	0.01μF, 1000WV, ±20%, Polyester	1	Z
C801	ECKDDS101MB	100pF, 100WV, ±20%, Ceramic	1	Z
C804	ECKDDS102MD	0.001μF, 100WV, ±20%, Ceramic	1	Z
C802, 803	ECTB25Y3R3	3. 3μF, 25WV, Electrolytic	1	Y
C806	ECEA16V470	470μF, 16WV. Electrolytic	1	Y
VARIABLE CAPACITORS				
CV1~5	ECV5YR33X30T	Tuning Gang, W/Trimmer (CT1, 2)	1	X
COMPONENT COMBINATION				
CR201	EXA5DL04C	FM Detector	1	Y
CR202	EXAF203Z471	AM Detector	1	Y
CR301, 302	EXA6FC04	19kHz Filter	2	Y

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
SWITCHES				
S1~3	ESRE134L20AE	Selector Switch, A	1	Ⓝ X
S4, 5	SST19S	Tape Monitor Switch	1	X
S6, 7	SST19S	Mode Switch	1	X
S8	SJJ23	Headphone Switch	1	X
S9	SSP19S	Voltage Adjuster Switch	1	X
S10	EVFN1DL25B54	Power Source Switch (RV505, 506)	(1)	X
S13—18	SSR5	Selector Switch, B	1	Ⓝ X
SPEAKERS				
SP1	EAS16P24SS	Woofer, 8Ω	2	Ⓝ X
SP2	EAS65PH34SD	Tweeter, 8Ω	2	X
CHASSIS				
CH1	XBAS1B2001U	Primary Fuse, 2A	1	X
CH2	XBA1C10NR5	Primary Fuse, 1A	2	X
CH3	XAMR12T125	Stereo Indicator Lamp	1	X
CH4	XAMR17H250-1	Lamp, Dial Pointer	1	X
CH5	XANR2Y20	Neon Lamp	1	X
CH6	XAM35K	Lamp, Dial Panel	5	X
CH7	RVL201	Socket, Lamp (CH6)	5	Z
CH8	SJS5301 SJS101	Player Power Source Socket	1 2	Z Z
CH9	SDP1045 SHG1079 SHR987 SDA31	Dial Pointer	1 1 1 1	Y Y Y Y
CH10	SXE519S XAS3K5S	Connecting Shaft for Selector Switch	1	Ⓝ Y
CH11	SDT1301	Tuning Shaft	1	Y
CH12	SDD51	VC Drum	1	Z
CH13	SDG1S	Gear	1	Z
CH14	SNE907	E Washer, VC Drum	1	Z
CH15	RDS205	Spring, Gear	1	Z
CH16	SXE401	Roller, A	1	Z
CH17	SXE399	Roller, B	1	Z
CH18	SXE403	Roller, C	1	Z
CH19	SXE483	Roller, D	1	Z
CH20	SJS5405 SJS41	Lead Terminal, P401 & P403	2 8	Z Z
CH21	SJS5307 SJS41	Lead Terminal, P402	1 3	Z Z
CH22	SJS5505 SJS41	Lead Terminal, P501	1 5	Z Z
CH23	SHG1081	Rubber, Stereo Irdicator Lanp	1	Z
CH24	SNW1001	Washer, Headphone Jack	1	Z
CH25	XNGS9C2	Nut, Headphone Jack	1	Z
CH26	RDZ05-5	Dial Cord	100"	X
CH27	SDS413	Spring, VC Drun	1	Z
CH28	SKD1613	Dial Panel	1	Y
CH29	SMZ199	Rubber, Lever Swich	2	Z
CH30	SMN735-4	Rear Panel	1	Z
CH31	RJF4202	ANT Terminal, A	2	Z
CH32	SJS27	ANT Terminal, B	1	Z
CH33	SJS29	ANT Terminal, C	1	Z
CH34	SJS13-1	Playback/Recout Socket Rear Terminal Panel Ass'y	1	Z
CH35	SJS37	Speaker Terminal	2	Z
CH36	SJF3201	2P Pin Socket	1	Z
CH37	XTB3+8CFZ	Screw	6	Z
CH38	RHG3-1	Rubber, ANT Lead	1	Z
CH39	SNE905	Rivet	6	Z
CH40	SMC303	Shield Plate, IC 201	1	Y
CH41	SMY145-2	Heat Sink Plate, Tr	1	Ⓝ Z
CH42	SMY147-1	Heat Sink Plate, Tr	1	Z
CH43	RHG5-1	VC Rubber	3	Z
CH44	SJA33	AC Cord	1	Z
CH45	SJP2223	2P Pickup Lead	1	Ⓝ Y
CH46	SXE513	Cord Clamper	3	Z
CH47	SFDA910A1	Player Power Plug	1	Y

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
		TRIMMERS		
CT3	ECV1ZW10P32	FM OSC Trimmer	1	Y
CT5 CT6 CT7 CT8	ECV3PW16P	MW ANT Trimmer SW ANT Trimmer SW OSC Trimmer MW OSC Trimmer	2	Y
		ACCESSORIES		
A1	SQF531-1	Printed Matter	1	Ⓝ Y
	SQX5299	Instruction Book (Order as SQF531-1)	(1)	Ⓝ Y
	SQX9013-1	Factory Servicenters List (Qrder as SQF53-1)	(1)	Y
	SQX187	Schematic Diagram (Machine Oil, Grease)	(1)	Ⓝ Y
A2	SPB445	Technical Matter	1	Ⓝ Y
A3	SPB299-1	Felt, Speaker	1	Y
A4	SJP2109	Speaker Cord	2	X
A5	SFVS910-1Z	Automatic Spindle	1	X
		PACKING		
PA1	SPG391	Packing Case (Oueside)	1	Ⓝ Z
PA2	SPN3685	Packing Case (Inside)	1	Ⓝ Z
PA3	SPN3687	Pad, Dust Cover	1	Z
PA4	SPN3689	Pad, Speaker	2	Z
PA5	SPN3691	Side Pad, Left	1	Z
PA6	SPN3699	Side Pad, Right	1	Z
PA8	SPN2899-1	Accessory Box	1	Z
PA9	SPN3793	Top Pad, Center Unit	1	Ⓝ Z
PA10	SPN3697	Bottom Pad, Center Unit	1	Z
PA11	SPB1045	Protction Sheet, Cord	2	Z
PA12	SPP61-1	Protection Cover, Center Unit	1	Z
PA13	RPP292-1	Polyethylone Bag, Center Unit	1	Z
PA14	SPE69	Protection Shed Sheet, Player	3	Z
PA15	SPE59	Lever Clamper	1	Z
PA16	SPE17	Clamper, Accessory Box	1	Z
PA17	SHP9135	Spacer, Player	1	Z
PA18	SPP173	Protection Bag, Speaker	2	Z
PA19	SFHS910A03	Spacer, T.T.	2	Z
PA20	SFHK910-02	Screw, T.T. Holding	2	Z
PA21	SPN3791	Fad, Speaker	1	Ⓝ Z
		PLAYER MODEL SAP-413 (See list on page 8)		
PL1 (1-2)	SFTG411-1E	T.T. Rubber	1	Z
PL2 (2)	SFWE154A	EP Adaptor	1	Y
PL3 (2-2)	SFKA530	Adaptor	1	Y
PL4 (5-4)	EPC-82SMBD	Cartridge	1	X
PL5 (5-7)	EPS-31STSD	Stylus	1	X
PL6 (15-2)	4W-13B	Motor	1	X
PL7 (15-16)	SFMC413-5 (50Hz) SFMC413-6 (60Hz)	Capstan	1	X

Ref. No.	Part No.	Description	Per Set (Pcs.)	Remarks
		CABINET		
CA1	SKM391	Upper Case	1	Z
CA2	SKM413	Bottom Case	1	Z
CA3	SKA5110	Cabinet, Left	1	Ⓝ Z
CA4	SKA5130	Cabinet, Right	1	Ⓝ Z
CA5	SYE175-4	Control Panel Ass'y	1	Z
CA6	SGW3954	Panel Escutcheon	(1)	Ⓝ Z
CA7	SGE161	Ornamental Bar, Left	(1)	Z
CA8	SGE163	Ornamental Bar, Right	(1)	Z
CA9	SDE105	Smoked Panel (Order as SYE175-4)	(1)	Z
CA10	SGB349	Badge	(1)	Ⓝ Z
CA11	SHS133	Shade for Panel	(1)	Z
CA12	SHP9091	Sheet	(1)	Z
CA13	SNE433	Nut	(1)	Z
CA14	SKU3910	Bottom Cover	1	Ⓝ Z
CA15	SKD1613	Dial Panel	1	Ⓝ Z
CA16	SGT6570	Specifications Plate	1	Ⓝ Z
CA17	SHG1087-1	Rubber for Dust Cover	2	Z
CA18	SEH9077	Hinge, Left	1	Ⓝ Y
CA19	SEH9077-1	Hinge, Right	1	Ⓝ Y
CA20	SEN299-1	Knob, Volume	4	X
CA21	SEN301-1	Knob, Selector Switch	1	X
CA22	SEN303-1	Knob, Tuning	1	X
CA23	SEC55	Knob, Lever Switch	2	X
CA24	SHS557	Felt, Leg	4	Z
CA25	XTW3+10EFZ	Screw, Bottom Cover	5	Z
CA26	SGK481	4ch Label	1	Z
CA27	SNE489	Ornamental Nut	1	Y
CA28	SMZ199	Rubber, Lever Switch	2	Z
CA29	XTW3+8EFY	Screw, Hinge	8	Z
CA30	SNE905	Speaker Terminal	4	Z
	SJF3101		2	Y
	SMN451		2	Z
CA31	XNG3BS	Nut, Speaker Fixing	16	Z
CA32	XMS31+20FVC	Screw, Back Board for Speaker	20	Z
CA33	SUV151	Hole Cover	1	Z
CA34	SKA5330	Speaker Cabinet	2	Ⓝ Z
CA35	SGT6590	Specifications	2	Ⓝ Z
CA36	SYE263	Dust Cover	1	Ⓝ Y

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